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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MCDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096			ARANCIBIA, MAUREEN GRAMAGLIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/736,783	HONJOU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Maureen G. Arancibia	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 December 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,2,4-12 and 14-23 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,4-12 and 14-23 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1, 2, 4-12, and 14-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Specifically, the recitation in independent claims 1 and 11 of "a plurality of pieces formed in relation to a distribution of temperatures in the...chamber at a time of plasma processing," and the recitation that "each of the plurality of pieces is shorter in axial length than a piece disposed at a location where a gradient of the temperatures at the time of the plasma processing is smaller" render the claims indefinite. The distribution of temperatures in the plasma or sample chamber, and the distribution of temperature gradients, may vary in the claimed apparatus, depending, for example, on the presence and use of additional structural components (i.e. heaters; the presence of a conduit putting the sample chamber in communication with the plasma chamber), the type of processing performed using the apparatus, environmental factors, or the length of time processing has already been performed up to the point referred to as "the time of plasma processing." There is no clear standard for determining where in the claimed apparatus the temperature would be greater or smaller. In sum, these recitations have no fixed meaning, and therefore make the claims indefinite. Appropriate correction and clarification are required.

Additionally, the recitation in claims 22 and 23 that the plurality of pieces of the protection tube are “loosely coupled” to each other is unclear. It is not clear what types of connections would constitute “loose couplings,” and what the alternative type of connection would be. For the purposes of the following examination on the merits, the recitation of the pieces being “loosely coupled” has been interpreted to mean that the pieces are not permanently bonded to each other or otherwise rigidly fixed. Appropriate correction and/or clarification are required.

The remaining claims are rejected due to their dependence on the independent claims.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, 6-8, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant’s Admitted Prior Art (AAPA) in view of U.S. Patent 6,613,587 to Carpenter et al.**

In regards to Claim 1, AAPA teaches a plasma processing apparatus (Figure 1), comprising: a plasma chamber 607 in which a high-density plasma is generated; a sample chamber 601 in communication with the plasma chamber for housing a sample 603 to be processed using the plasma; and a protection tube 620 for protecting an inner

wall of the plasma chamber from deposition of a product that results from the plasma processing.

AAPA does not expressly teach that the protection tube is composed of a plurality of pieces.

Carpenter et al. teaches that a protection tube 30 is composed of a plurality of pieces 31-38 that can differ in length. (Figure 2)

It would have been obvious to one of ordinary skill in the art to modify the protection tube taught by AAPA for it to be composed of a plurality of pieces of varying length. The motivation for making such a modification, as taught by Carpenter et al. (Column 1, Lines 45-57; Column 4, Lines 5-22), would have been to allow damaged sections of the protection tube to be replaced without having to replace the entire protection tube and without having to disassemble the plasma chamber. One of ordinary skill in the art would have been further motivated to vary the lengths of the plurality of pieces in the manner taught by Carpenter et al. in order to differentiate them from each other, and to make sure that the damaged sections are replaced with the matching replacements.

The recitation that the plurality of pieces is formed in relation to a distribution of temperatures in the plasma chamber at a time of plasma processing, and the recitation that each of the plurality of pieces is shorter in axial length than a piece disposed at a location where a gradient of temperatures at a time of plasma processing is smaller are process limitations, not structural recitations as Applicant asserts. The distribution of temperatures and the distribution of temperature gradients would depend, among other

factors, on the presence and/or use of additional structural components (i.e. heaters; the presence of a conduit putting the sample chamber in communication with the plasma chamber), the type of processing performed using the apparatus, environmental factors, or the length of time processing has already been performed up to the point referred to as "the time of plasma processing." Moreover, as discussed above in the rejection under 35 U.S.C. 112, second paragraph, not only are these process limitations, but also limitations with no definite or fixed meaning.

It has been held that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). See MPEP § 2114. See also *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In this case, the combination of AAPA and Carpenter et al. teaches the structural limitations of a protection tube comprising a plurality of pieces disposed in an axial direction, and varying in length. This structure meets all of the *structural limitations* of the claim. The apparatus taught by the combination of AAPA and Carpenter et al. would be capable of being operated in such a way and with various environmental conditions and process settings, so as to generate any number of distributions in

temperature and temperature gradient, which in turn would be capable of corresponding to a given arrangement of the axial segments of the protection tube.

In regards to Claim 2, AAPA teaches that the plasma chamber 607 and the protection tube 620 are tubular in shape (Figure 1). The combination of AAPA and Carpenter et al. teaches that the plurality of pieces are tubular members disposed in an axial direction of the protection tube to comprise the protection tube.

In regards to Claim 6, AAPA teaches that the protection tube is made of quartz.  
(Specification, Page 4, Line 1)

In regards to Claims 7 and 8, AAPA teaches that the apparatus is an electron cyclotron resonance plasma apparatus that subjects the sample to sputtering.

(Specification, Page 2, Line 2)

In regards to Claim 22, the combination of AAPA and Carpenter et al. does not expressly teach that the plurality of pieces of the protection tube are loosely coupled to each other.

Carpenter et al. additionally teaches that the plurality of pieces of protection tube 30 can be loosely coupled to each other (*tongue and groove interconnections*; Figure 2; Column 4, Lines 34-36), as broadly recited in the claim.

It would have been obvious to one of ordinary skill in the art to modify the combination of AAPA and Carpenter et al. to have the pieces of the protection tube be coupled to each other via tongue and groove interconnections. The motivation for doing so, as would have been apparent to one of ordinary skill in the art at the time of the

invention, would have been to allow for easy alignment, assembly, and disassembly of the liner pieces.

**5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Carpenter et al. as applied to claim 1 above, and further in view of U.S. Patent 6,797,639 to Carducci et al.**

The teachings of AAPA and Carpenter et al. were discussed above.

In regards to Claims 4 and 5, the combination of AAPA and Carpenter et al. does not expressly teach that the protection tube is provided with a plurality of grooves on the inner wall thereof in parallel with an axis of the protection tube at substantially equal circumferential intervals (i.e. evenly spaced longitudinal grooves).

Carducci et al. teaches that a protection tube 118 can be provided with evenly spaced longitudinal grooves 1810. (Figure 20; Column 18, Lines 1-2)

It would have been obvious to one of ordinary skill in the art to modify the combination of AAPA and Carpenter et al. to provide the protection tube with a plurality of evenly spaced longitudinal grooves on the inner wall thereof. The motivation for making such a modification, as taught by Carducci et al. (Column 16, Line 33 - Column 17, Line 39), would have been to increase adhesion of deposited films on the protection tube and thereby reducing flaking of such films into the chamber and subsequent substrate contamination or damage.

**6. Claims 9-12, 16-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Carpenter et al. as applied to claims 1-3 and 6-8 above, and further in view of U.S. Patent 6,408,786 to Kennedy et al.**

The teachings of AAPA and Carpenter et al. were discussed above in regards to Claim 1.

In regards to Claims 9 and 10, the combination of AAPA and Carpenter et al. does not expressly teach that the plasma is an inductively coupled plasma or a helicon wave plasma.

Kennedy et al. teaches that ECR, inductive coupling, and helicon wave are equivalent means of generating plasma.

It would have been obvious to one of ordinary skill in the art to select any of ECR, inductive coupling, or helicon wave as art-recognized equivalent means to generate a plasma. It has been held that an express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. *In re Fout*, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

In regards to Claim 11, AAPA does not expressly teach that a protection tube can be disposed in the sample chamber.

Kennedy et al. teaches that a tubular protection tube 20 can be disposed in a sample chamber 2.

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by AAPA to dispose a protection tube in the sample chamber. The motivation for doing so, as taught by Kennedy et al. (Column 1, Lines 56-58), would have been to protect the walls of the *sample* chamber.

The combination of AAPA and Kennedy et al. does not expressly teach that the protection tube is composed of a plurality of pieces.

Carpenter et al. teaches that a protection tube 30 is composed of a plurality of pieces 31-38 that can differ in length. (Figure 2)

It would have been obvious to one of ordinary skill in the art to modify the protection tube taught by the combination of AAPA and Kennedy et al. for it to be composed of a plurality of pieces of varying length. The motivation for making such a modification, as taught by Carpenter et al. (Column 1, Lines 45-57; Column 4, Lines 5-22), would have been to allow damaged sections of the protection tube to be replaced without having to replace the entire protection tube and without having to disassemble the plasma chamber. One of ordinary skill in the art would have been further motivated to vary the lengths of the plurality of pieces in the manner taught by Carpenter et al. in order to differentiate them from each other, and to make sure that the damaged sections are replaced with the matching replacements.

The recitation that the plurality of pieces is formed in relation to a distribution of temperatures in the sample chamber at a time of plasma processing, and the recitation that each of the plurality of pieces is shorter in axial length than a piece disposed at a location where a gradient of temperatures at a time of plasma processing is smaller are process limitations, not structural recitations as Applicant asserts. The distribution of temperatures and the distribution of temperature gradients in the sample chamber would again depend, among other factors, on the presence and/or use of additional structural components (i.e. heaters; the presence of a conduit putting the sample chamber in communication with the plasma chamber), the type of processing performed using the apparatus, environmental factors, or the length of time processing has already

been performed up to the point referred to as "the time of plasma processing." Moreover, as discussed above in the rejection under 35 U.S.C. 112, second paragraph, not only are these process limitations, but also limitations with no definite or fixed meaning.

It has been held that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). See MPEP § 2114. See also *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In this case, the combination of AAPA, Kennedy et al., and Carpenter et al. teaches the structural limitations of a protection tube in the sample chamber comprising a plurality of pieces disposed in an axial direction, and varying in length. This structure meets all of the *structural limitations* of the claim. The apparatus taught by the combination of AAPA, Kennedy et al., and Carpenter et al. would be capable of being operated in such a way and with various environmental conditions and process settings, so as to generate any number of distributions in temperature and temperature gradient, which in turn would be capable of corresponding to a given arrangement of the axial segments of the protection tube.

In regards to Claim 12, AAPA teaches that the sample chamber 601 is tubular. (Figure 1) The combination of AAPA, Kennedy et al., and Carpenter et al. teaches that the plurality of pieces are tubular members disposed in an axial direction of the protection tube to comprise the protection tube.

In regards to Claim 16, the combination of AAPA, Kennedy et al., and Carpenter et al. just discussed does not expressly teach that the protection tube in the sample chamber is made of quartz.

AAPA teaches that a protection tube can be made of quartz. (Specification, Page 4, Line 1)

It would have been obvious to one of ordinary skill in the art to form the protection tube in the sample chamber out of quartz, as well. The motivation for doing so would have been to select an art-recognized (AAPA) suitable material for manufacturing the protection tube.

In regards to Claims 17 and 18, the apparatus taught by combination of AAPA, Carpenter et al., and Kennedy et al. would be inherently capable of subjecting the sample to etching or chemical vapor deposition, based on the process conditions. This rejection is based on the fact the apparatus structure taught above has the inherent structural capability of being used in the manner intended by the Applicant. When a rejection is based on inherency, a rejection under 35 U.S.C. 102 or U.S.C. 103 is appropriate. (See *In re Fitzgerald* 205 USPQ 594 or MPEP 2112).

In regards to Claim 19, see the discussion of Claim 8 above.

In regards to Claims 20 and 21, see the discussion of Claims 9 and 10 above.

In regards to Claim 23, the combination of AAPA, Kennedy et al., and Carpenter et al. does not expressly teach that the plurality of pieces of the protection tube are loosely coupled to each other.

Carpenter et al. additionally teaches that the plurality of pieces of protection tube 30 can be loosely coupled to each other (*tongue and groove interconnections*; Figure 2; Column 4, Lines 34-36), as broadly recited in the claim.

It would have been obvious to one of ordinary skill in the art to modify the combination of AAPA, Kennedy et al., and Carpenter et al. to have the pieces of the protection tube be coupled to each other via tongue and groove interconnections. The motivation for doing so, as would have been apparent to one of ordinary skill in the art at the time of the invention, would have been to allow for easy alignment, assembly, and disassembly of the liner pieces.

**7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Carpenter et al., and further in view of Kennedy et al. as applied to claim 11 above, and further in view of Carducci et al.**

The teachings of AAPA, Carpenter et al., and Kennedy et al. were discussed above.

In regards to Claims 14 and 15, the combination of AAPA, Carpenter et al., and Kennedy et al. does not expressly teach that the protection tube is provided with a plurality of grooves on the inner wall thereof in parallel with an axis of the protection tube at substantially equal circumferential intervals (i.e. evenly spaced longitudinal grooves).

Carducci et al. teaches that a protection tube 118 can be provided with evenly spaced longitudinal grooves 1810. (Figure 20; Column 18, Lines 1-2)

It would have been obvious to one of ordinary skill in the art to modify the combination of AAPA, Carpenter et al., and Kennedy et al. to provide the protection tube with a plurality of evenly spaced longitudinal grooves on the inner wall thereof. The motivation for making such a modification, as taught by Carducci et al. (Column 16, Line 33 - Column 17, Line 39), would have been to increase adhesion of deposited films on the protection tube and thereby reducing flaking of such films into the chamber and subsequent substrate contamination or damage.

***Response to Arguments***

8. Applicant's arguments filed 15 December 2005 have been fully considered but they are not persuasive.

In regards to Applicant's argument against the citation of *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987), the Examiner responds that contrary to Applicant's assertion that *Ex parte Masham* is only relevant to the material worked on by an apparatus, *Ex parte Masham* also addresses the issue of intended use or functional language in apparatus claims. It was held that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham* was cited in this context. See also MPEP § 2114. See also *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); *In re Swinehart*, 439 F.2d 210, 212-13,

169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959); and *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

It is believed that Applicant's argument that the recitation that "each of the plurality of pieces is shorter in axial length than a piece disposed at a location where a gradient of the temperatures at the time of the plasma processing is smaller" should be accorded the weight of a structural limitation has been addressed in the rejections under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 103(a) set forth above.

In response to Applicant's argument that Carpenter et al. does not teach protecting an inner wall of a chamber against temperature gradients, the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the teachings of Carpenter et al. with the teachings of AAPA to have the

protection tube be composed of a plurality of pieces of varying length would have been to allow damaged sections of the protection tube to be replaced without having to replace the entire protection tube and without having to disassemble the plasma chamber. One of ordinary skill in the art would have been further motivated to vary the lengths of the plurality of pieces in the manner taught by Carpenter et al. in order to differentiate them from each other, and to make sure that the damaged sections are replaced with the matching replacements.

In regards to Applicant's argument against the teachings of Carducci et al., Carducci et al. was cited for the teaching of longitudinal grooves 1810, not circumferential grooves 1805. Moreover, even if the circumferential grooves of Carducci et al. were also incorporated into the combination of AAPA and Carpenter et al., or the combination of AAPA, Kennedy et al., and Carpenter et al., such a combination would not be excluded by the claims. In this regard, the Examiner also observes that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

### ***Conclusion***

9. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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